Hobbies WEEKLY

Model Aeroplane and Hangar Design FREE!

2D.

May 25th. 1935 Vol. 80. No. 2066

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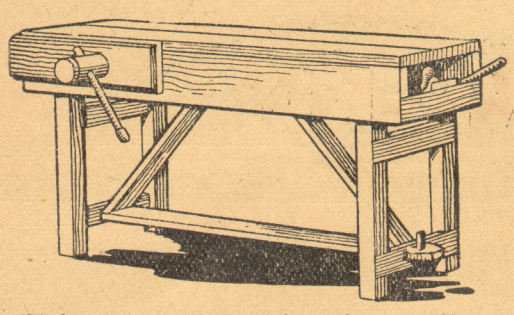

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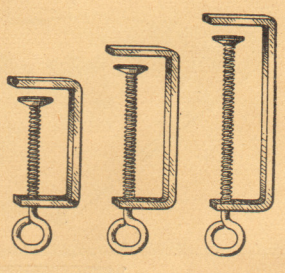

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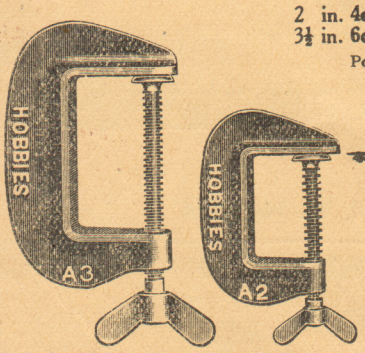

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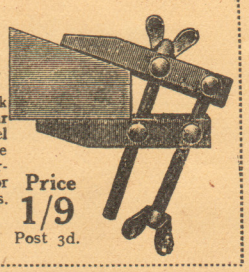

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Hobbies WEEKLY

May 25th. 1935

Letters should be addressed to The Editor, Hobbies Weekly, Dereham, Norfolk.

Vol. 80. No. 2066

NOTES of the WEEK

This Week's Good Things—A Lord's Prayer Gift—A Generous Reader—The Prayer in Welsh—A Club at Doncaster — Our Photo Competition.

WHEN you glance through this issue just notice the range of good things which are offered you. There are articles on model-making, woodwork, photography, stamp collecting, film notes, camping, fretwork and a host of other equally happy hobbies. You certainly will find no other book giving you such a wide range at the price of 2d. Why, the patterns for that Aeroplane and Hangar are worth that alone.

A READER'S and League Member's generous act of outstanding merit is illustrated by the picture below. It is of Master Douglas Young of Macclesfield and the "Lord's Prayer" Tablet he has cut from Hobbies Design No. 5 Special in three weeks of his spare time. The tablet he has offered to the Moss Rose Mission where it was recently unveiled by Councillor A. H. W. Wragg in the presence of a large and appreciative gathering who all greatly admired the excellent work. Such a piece of work deserves congratulations, whilst the happy and gracious thought in offering it to a Church is an example of generosity and goodness other readers would do well to emulate.

MENTION of the Lord's Prayer Tablet reminds me of the offer made some time ago, when I spoke of a design being prepared in Welsh. So many readers have written to me asking for one that I have had a special tracing prepared of the wording in Welsh. The phrases are so arranged that they can be cut as overlays to fit the tablet illustrated here to make up the complete Prayer. Readers can therefore cut out this excellent design in their own language. The overlay tracing mentioned, giving all the wording set out full size can be obtained if you send a postal order for 6d. to me to cover the cost.

ONE of our readers, H. Richardson, who has just returned from India, tells me that whilst there he made a model of the "Victory," which won him 1st Prize in an Exhibition and greatly interested all who saw it. By the way, Mr. Richardson now lives at 49 Arbitration Street, Doncaster and will be pleased to hear from other readers in the district who would like to form a Hobbies Club.

I HOPE all our readers who own a camera are going in for the Competition this month. It closes on the 31st and subjects must be on or about the Farm. You have still time to send in your entry to win one of the prizes offered. And if you do not succeed now there will be another Competition next month.

I hope to be able to announce the result of that Film Competition in our next week's issue. There were a large number of entries, which naturally take a good deal of sorting, but I believe they will be settled in time. Look out for the Derby Race Game, too! A decided novelty, easily made, where the horses race round the course and light little coloured bulbs as they go.

THE many and varied hobbies of the scholars at Leyton High School were shown recently in an exhibition. Models were largely on view, including a remarkably complete airport. A 440 year old clock with wooden cogwheels was also an object of great interest.

The Editor

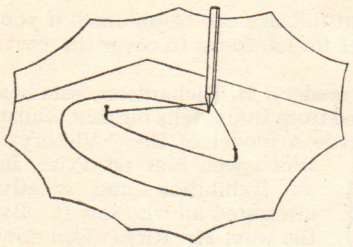
Send your own simple tips to The Editor, Hobbies Weekly, Dereham, Norfolk. Keep them short and add rough pencil sketches if possible.

HINTS AND TIPS

For original Tips published the sender will receive one of Hobbies Self-filling Fountain Pens. We cannot acknowledge or print all tips sent in.

Drawing an Ellipse.

TO draw an ellipse or oval, on wood, or, if the drawing paper is fixed to a drawing board, fix two pins in the wood and put a loop of thread over them loosely. Then get a sharp pencil and take



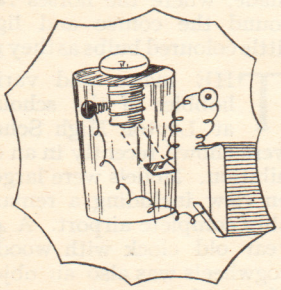
it around, always keeping the thread taut inside the loop. By varying the distance between the pins, the size of the oval can be varied.

Cutting Mortises

A DIFFICULTY is generally experienced when cutting a mortise to a certain depth. This may be overcome by sticking some paper the required distance away from the cutting edge of the chisel.

Home-made Bulb Holder.

BORE a hole in the centre of a cork, large enough to hold a bulb tightly. Next, push a strip of tin through the cork (as in sketch) so that when the bulb is inserted, the solder on the end of it just rests on the tin. Put in a small screw, letting its tip touch the brass part of the bulb. Attach



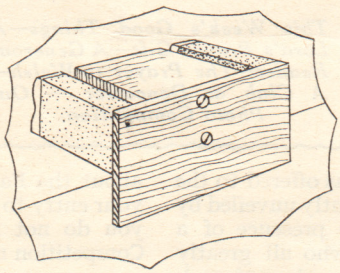
pieces of wire both to the screw and the piece of tin which was left protruding and join them in series to a battery. The switch and the holder is then complete.

Bending Celluloid

IF possessing a celluloid article, the shape of which it is desired to alter, a successful and simple method is to hold it in boiling water for about half a minute, after which it will be found pliable and can be bent to any desired shape. Within a few seconds it will be found to regain its original hardness.

For Round Edges.

FIRST, get a piece of ⅛in. fretwood. Cut it to the length of your glasspaper block and 2ins. wide. Then screw it to your sandpaper block using fretscrews,



one on each side of the hollow on the side of the block. Take care the piece of wood fixed to the block is at right angles to the block. The illustration shows how it is done.

Frosted Glass

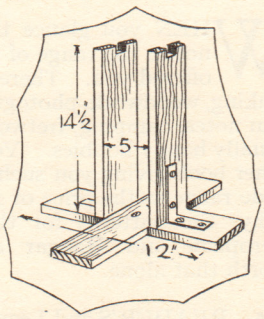
A SIMPLE way to frost glass is to make a strong solution of Epsom Salts and put on to the glass with a cloth. When the glass is dry a 'frost' will appear. To remove, all that is done is to wash off with a cloth soaked in water.

Keeps away Rust

UNLESS one is careful, tools will become rusty. To prevent this, get an old jam jar and fill it with rice. Take the tools and put them in jar (point downwards) until the steel part is covered by rice. This will keep tools nice and bright.

A Cycle Stand.

CUT from some wood ⅜in. thick and 2ins. wide, two lengths 12ins. long. Join them in the middle by a halving joint, strengthened by two screws. Then cut two uprights 14½ins. long and at one



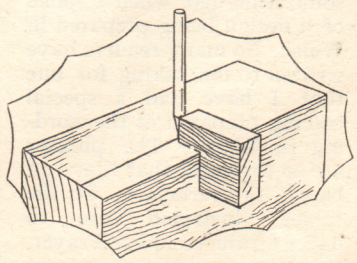
end of each make a slot large enough for the nut on the back axle of your bicycle. Fasten the uprights about 5ins. apart by driving two screws through the base into the ends of the uprights, and strengthen with angle plates on the outside.

Fretmachine Hint

WHEN using a fretmachine for rather a long time, a thin layer of dust often covers the whole machine. This can be removed by blowing over the machine with a bicycle pump.

Wood Gauge.

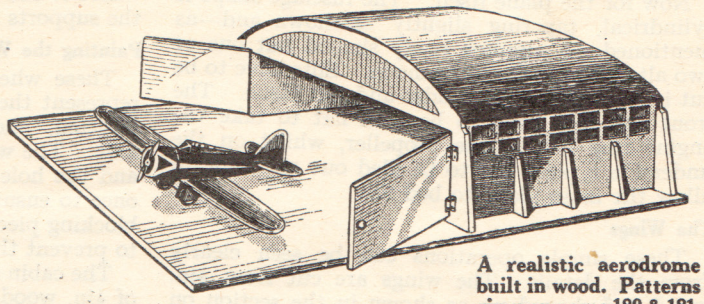
ANY old piece of wood will do for this simple gauge. If a quarter of an inch gauge is needed, take a small piece of wood, measure a quarter of an inch square



upon the wood and cut out with tenon saw. This done, place on the wood and draw the necessary line with pencil as shown.

A MODEL AEROPLANE AND HANGAR

MODEL-MAKING is becoming increasingly popular amongst our readers, and there seems to be no end to the variety of articles which can be built in wood with the use of the fret-saw and a few tools. An example is given by the various designs and articles in these pages each week, and another excellent one is shown here. It will, we know, prove as popular as any we have published, because aeroplanes and anything to do with them, always appeal.



A realistic aerodrome built in wood. Patterns given on pages 180 & 181.

Strangely enough, too, a small model often calls for greater admiration than a large one, because it is obvious the worker has to put in a good deal of intricate work in making and shaping which would not appear so striking in a large model. These remarks apply to the hangar and aeroplane which are to be made from the patterns shown in the centre pages of this issue.

The hangar itself is 8¾ins. and 5¼ins. deep. It is fitted with a double-door front and will accommodate a tiny model aeroplane which has a wing span of 7ins. and a fuselage 3½ins. long.

The flying ground itself is made of a base measuring 12ins. by 9ins., and when cut in wood and painted up, forms a realistic and striking model for exhibition purposes.

The making, of course, entails a little care and attention in fitting and shaping the various parts, particularly as the plane itself is small. In this respect, however, a good deal of work is saved by the supplying of a fuselage ready shaped up.

Shaped Fuselage

Indeed, the complete parcel of wood for the necessary parts is the easiest way of going to work, and one is obtainable from Hobbies Ltd., for the low sum of 1/6. This includes not only the wood itself, but the necessary wood, toes and turned fuselage itself.

Details of the actual parts required are given in the patterns on the centre pages. Some of these drawings are to scale and the wood must be cut out to the sizes indicated.

The base should be of plywood, and can, of course, be made up larger if thought fit. The position of the hangar is close to one end, and the work of completing this should be undertaken first.

The Hangar

All parts, of course, are cut clean with a fret-saw and then papered up to be left smooth and clean. The front and back of the hangar are both the same shape in outline, but from the front the doors have to be cut, going along the lines indicated on the pattern.

When the doors have been taken out, replace them in position and fix them on with two ⅜in. brass hinges in the position indicated. Two tiny knobs are also to be fitted for ease in opening, and it is advisable to glue a little door stop piece behind at the top to prevent them pressing inwards.

Between the back and front of the hangar are the two sides. Cut them out and mark on the position of the windows and buttresses before cleaning off the paper. These sides are plain rectangles glued between the back and front, and further support is given by three buttresses on each side.

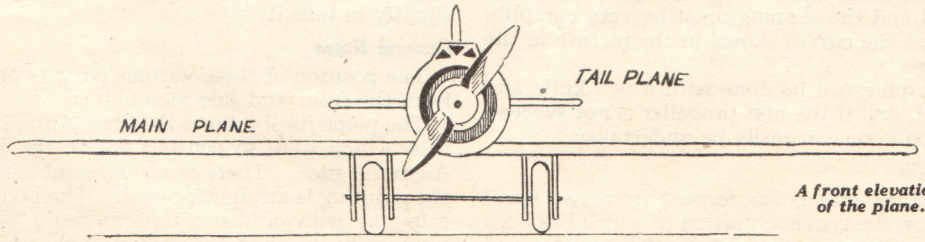
The windows are painted on, either before or after the fixing.

Get these four main pieces firmly glued together and to the base. The sides, of course, are upright

MATERIALS SUPPLIED

For making this model, a parcel of plywood and other wood is supplied, including Toes, Knobs, and Turned Wood Engine, price 1/6 post free 2/-. The Fittings include 2 pairs small brass Hinges and sufficient wire, 3d.

Complete set wood and fittings 2/3 post free.



A front elevation of the plane.

and come into line with the back edge of the door. The roof is a piece of thin plywood glued to the curve provided and further held by one or two small fretnails. Before fixing, shape off the top edge of the sides in line with the back and front to allow this roof to fit on comfortably.

Now for the plane itself. The fuselage shape is cylindrical, tapering slightly as shown and—as mentioned—is supplied ready shaped but one or two alterations have to be made. Slits have to be cut in the tail for the rudder and tail plane. The front will also have to be filed flat to take the engine ring behind the propeller, whilst on the underside, a piece has to be filed out 1in. wide to allow the main plane to bed flat.

The Wings

These simple operations can be seen clearly from the details. The wings are cut from ⅛in. wood and shaped up as shown in the section on the pattern. This can be undertaken with file and glasspaper. The main plane piece is then glued to the underside of the fuselage and the shaped ring glued on the front. Central in this ring is glued a small knob cut off from the one supplied.

To the centre of this knob the propeller itself is fitted by means of a pin or thin brass nail. The propeller itself is 1½ins. long and ¼in. wide from ⅛in. wood and the shaping must be very carefully done to get the curves shown in the picture in the centre pages.

This shaping can be done with a pen knife and glasspaper, and if the first propeller is not successful, a second one can easily be undertaken.

Wheel Details

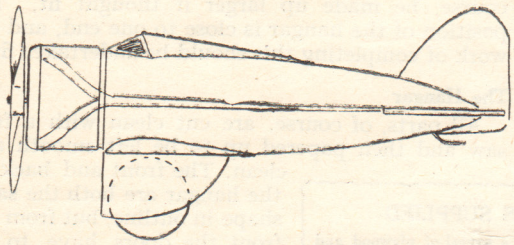
The landing wheels are formed from two small No. 19 toes, the concave portion of which has been filed off, as shown in the detail. The rudder and tail plane are fitted together with a halving joint, and then glued securely into the tail of the fuselage. The little skid is provided by a piece of bent wire.

Each wheel is fitted between two small pieces of plywood which form spats as well as supports. The position is shown in the detail of the underside, where it can be seen a piece of wire runs through the supports and through the centre of the wheels.

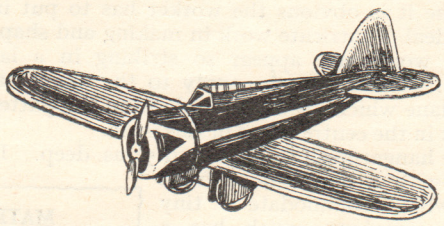
Painting the Wheels

These wheels, of course, should be painted to represent the disc and tyre before being put into position, and should turn loosely on the wire axle. The wheel supports must be glued securely and the hole for the wire cut through all four at once to ensure being opposite. If necessary, tiny blocking pieces can be fitted between the supports to prevent them being knocked off.

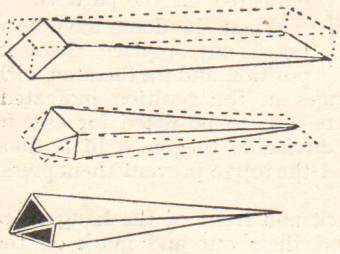
The cabin of the plane is composed of two pieces of ⅛in. wood, 1⅝ins. long and 5/16in. wide. Glue them together, and afterwards shape up as shown in the three illustrations herewith. The first shaping produces the flat wedge shape with sloping front. Then the fretsaw can cut down the wedge to a definite taper point at both ends. Finally, the front is painted to represent the transparent windows of the cabin base. It is glued to the top of the fuselage just behind the ring piece, after the body has been flattened slightly to take it.



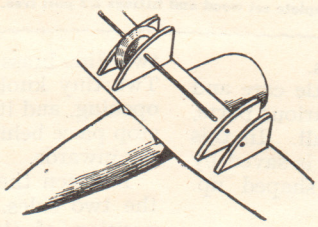
A side view showing positions.



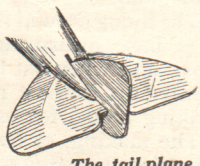
The completed plane model painted.



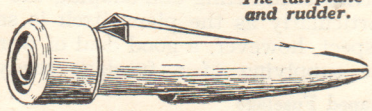
Three details of how the cabin is cut down to shape.



An underview showing wheel details.



The tail plane and rudder.



The engine piece ready for fixing.

General Notes

The position of these various parts is obtainable from the front and side views given.

The plane itself follows the lines of the Lockheed type which were so conspicuous in the England-Australia race. There is no external rigging and the painting is straightforward. The body can be coloured with a distinctive marking along the fuselage as shown in the picture of the plane itself.

WET WEATHER CAMPING

Although we like it fine, wet weather is sure to come sometime. Make it happier by knowing these useful hints.

THERE are occasions when, no matter what precautions we have taken in consulting the Weather Oracle, rain sets in just at the time when we are all packed up and actually on the way to camp. It is then too late to postpone the holiday.

The lorry rattles on its way, the tent and baggage are dumped on the camping site, the rain comes pelting down harder than ever! Too bad—yet we must make the best of it, hoping that a welcome change will come on the morrow.

Pitching a tent on wet ground calls for some discretion, especially when storm clouds are discharging their liquid arrows on your head.

The Ground Site

First, select a piece of ground that stands fairly high, or with a slight slope is perhaps better, so that the water drains well away. A knoll with a wind-break behind or some such shelter as a belt of trees or high hedge a short distance off being a suitable spot.

Then to pitching the tent. Everything must be kept dry as possible—all, that is, with the exception of the exterior of the tent. Ground sheets and any other waterproof material handy may be used to cover over the baggage, bedding, food packages, etc. Then you need not worry about such dunnage getting soaked and spoiled whilst the tent is being erected.

Pegging the Tent

As the ground will be soft, use two tent pegs for each guy instead of one, the two being knocked into the turf in line and about a foot to eighteen inches apart. Knock in the pegs at a more acute angle than you would ordinarily.

Whilst one member of the party is digging a shallow trench round the tent to catch the drippings from the eaves, another should be transferring the bedding and baggage from under the ground sheets. Before walking in and out of the tent after it has been pitched, strew the entrance and the 'gangway' with heather, bracken or long grass; then having finished all the paddling in and out, this floor covering can be taken up, leaving the floor of the tent in good order, whereas on a pouring wet day you keep tramping in and out of the tent carrying stuff, the turf getting all churned up.

Should it be possible, floor boards might be taken if the weather suggests rain considerably ahead, a wood floor keeping the tent comfortable.

If you take a spare tent specially for the stores, all the better, get this pitched first, putting all the baggage beneath a single sheet, then erecting your 'house.'

Carry Firelighters

Any other members of your party—presuming there are three or four members—should endeavour to get a fire going whilst the tents are being pitched. It is a good idea to take one or two 'fire-lighters' along and also two or three bundles of dry firewood, when the weather is wet; then you will have no trouble in finding wood that will burn quickly.

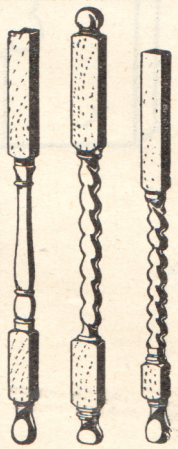
Having got your fire going, a further supply of fuel should be collected and placed nearby, the fire being replenished little and often; by this means it is possible to keep a good fire going even if it rains hard.

Do not Touch!

Wet will cause ropes to contract; therefore, leave the guys fairly slack. A good tip in rainy weather is to put under the tent poles two pieces of board about half-an-inch thick; then, if you suspect during the night that the guys are becoming too tight, lift the pole slightly, knock out one piece of wood, and lower the pole again. This saves turning out into the rain to slacken the ropes.

In wet weather care should be taken not to touch the inside of the tent roof, or a leak may develop. Should a trickle make its appearance, it is possible to prevent dripping and finding its way down your open shirt-neck by taking a flat strip of wood—a lead pencil will do if nothing better is handy—and starting inside the tent, just above the spot where the leak shows, press fairly hard on the canvas and follow smartly in a straight line down to the top of the walling, or, if a wall-less tent, to the ground, the water will then follow this line instead of dripping down.

If a tent is well pitched, the fire kept going and plenty of reasonably dry wood under shelter, there is little to fear from a brief spell of rainy weather. Be not tempted to pitch the tent under trees if it happens to be raining when you arrive at the camp site. Drippings from boughs and leaves are worse than the



25 % off
All LEGS!

A genuine offer to "Hobbies Weekly" readers. Select any set of Legs listed in Hobbies 1935 Handbook and deduct 25% (3d. in the 1/-) from the price. Jump to it NOW! This offer will soon be snapped up. Add return postage as shown in the Handbook.

For One Week Only

You must use the COUPON on page 3 of cover.

rain itself. In wet weather wear gun boots.

If it is raining when you have to strike camp, there is nothing for it save to pack up in the wet. First, pack up all utensils, etc., and place them ready for the lorry or cart that is to fetch them. Collect bedding, blankets, etc., and, having made them into neat bundles, place near tent door. Get the ground sheets and throw over them. Finally, take down the tent; wet tents are not easy to handle, especially if of the heavy 'Bell' type. Keep all the stuff well covered with waterproof sheets, if you have them.

On arrival at home, dry the tent at your first opportunity; if this is not done it will be spoilt by rot and mildew. The parts requiring most drying are the walls, the hem and eyes of the fly-sheet and all double parts. Spread out the tent as soon as possible on the lawn or grass plot, hanging over a line in the backyard and leaving in the sun until fit to be packed away.

Never pack up a tent until the fabric is thoroughly dried. A tent is ready and dry enough to be put away only when the parts which will retain moisture longest, i.e., the ropes or cords, seams, and double parts, are quite dry. All spare ropes and guys should also be dried, and cooking utensils, which might have been exposed to the rain whilst you were packing them, should also be cleaned and put into good order before being stored away.

It is perhaps needless to mention that, when leaving the camp site after a rainy spell, all grips or channels that you may have had to cut in order to drain the water away from vicinity of the tent, should be filled in and the turf replaced.

A Quaint Door-Knocker in Wood

WOULD you like to have this quaint Toby door-knocker fixed to your door to welcome you when you come into your room? It is not difficult to make, and this is how to proceed.

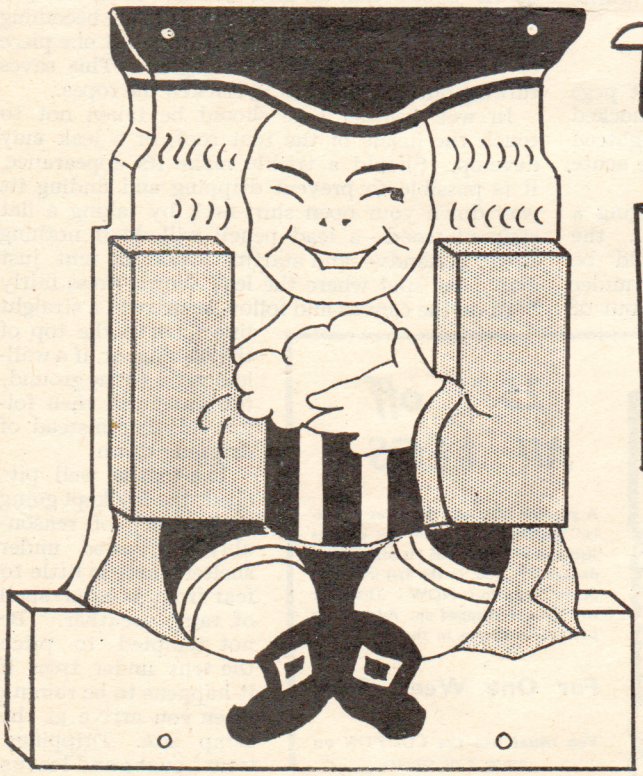
Make a tracing of the figure leaving out the ring and hand-trace this down on to a piece of $\frac{3}{8}$in. or $\frac{1}{2}$in. wood and cut it out with the fretsaw. Then in the same way, cut out the second piece with the arms and ring.

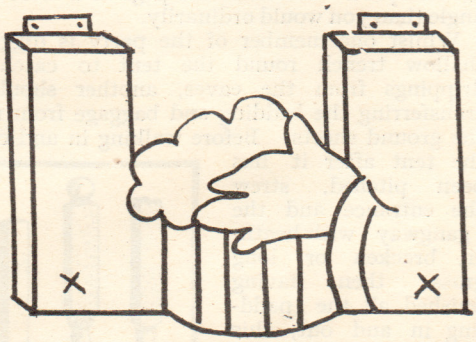
Next enamel the two pieces—using bright blue for the arms and coat tails, brown for the breeches, and a black hat and shoes. Use a plain flesh tint for all over the face and hands, keeping them flat without any shading. When the enamel is quite dry and hard the features can be traced on and painted in with a fine outlining brush and black enamel, using red for the lips.

You will need four little short brass-headed pins to make the rat-tat part of the door-knocker.

Those having a round brass top such as used on leather chairs, stairs, etc. are the kind.

These are driven in behind the arms—two crosses on the smaller drawing show where. They must come in exactly the same position behind, on the larger piece of wood put in the other two.





Now the four pins should knock one against the other when the arms are lifted. Fix the two parts together by means of small hinges underneath the tops of the arms, so that they do not show.

Bore four small holes for nails or screws to fix the knocker, and there it is ready for your visitors when they want to warn you of their approach.

A GARDEN BIRD TABLE

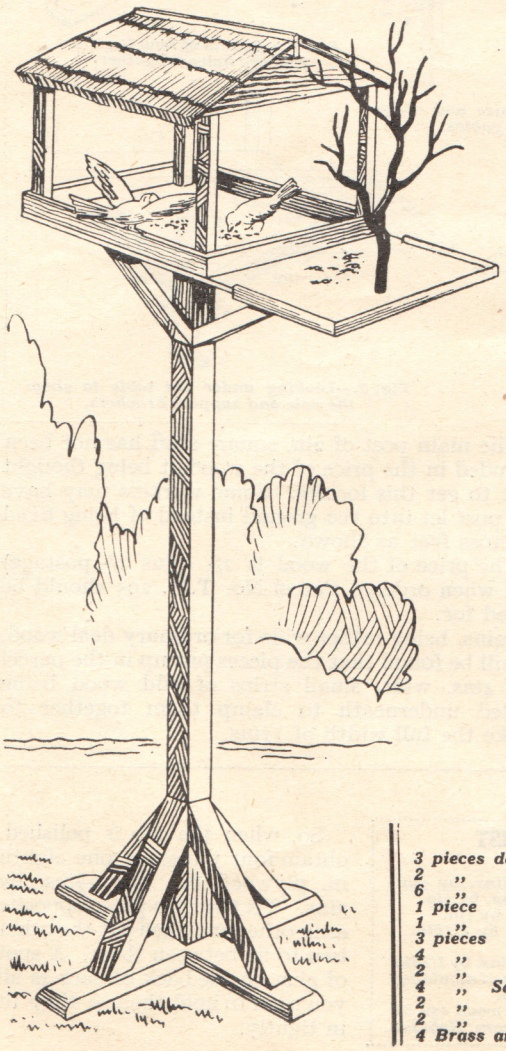
IN many gardens one generally finds a Bird Table adding to their beauty. Placed in an odd corner, amidst a nicely arranged rockery as a background, such a structure as shown in our sketch would, we suggest, add a picturesque note.

Quite a number of the more recent bird houses have their roofs covered with either straw or heather thatch instead of the ordinary wood. The thatch certainly gives a real old-time appearance, it being very simple to put on.

Another item which greatly adds to the beauty is a tree-stump perch fixed to the table at one end.

The House Frame

In making up the table illustrated, the house itself should first be made. The construction of this is shown (Fig. 1), and consists of a plain piece of board for the base 21ins. long by 12ins. or three pieces 4ins. wide. All are ½in. thick with uprights of ¾in. square stuff, 8ins. long. These are built up, being held together at their extremities by two pieces of wood, 15ins. by 1in. by ¼in. and two pieces 11½ins. by 1in. by ¼in.



To the top of each upright and facing inwards, are screwed angle plates to hold the gables of wood immediately above. These plates are of brass and can be bought from Hobbies for 5d. the set of four, the number to be quoted when ordering being 101. The enlarged detail (Fig. 1) shows how these are screwed on.

The two gables are of ½in. wood, cut to the shape and dimensions shown (Fig. 2.) The notches at the point are cut out to receive the ridge piece which holds the two ends firmly together. This piece is also shown in the figure with the positions dotted on where it fits into the gables.

The Roof Pieces

The ridge itself is of ½in. wood. After the end gables and the ridge are fixed, the six boards running the length of the roof are cut and nailed in. Each board is 13¼ins. long by about 1½ins. wide and ⅜in. thick.

Before fixing these boards, get the positions for fixing them by drawing lines ½in. down from the top edges, as shown by the dotted lines (Fig. 2) and the detail (Fig. 3). The larger diagram (Fig. 3) shows the boards fixed and in place, the near gable board being removed for sake of clearness.

The house portion is now complete, except for the thatching, this should be done when all the other work is complete.

The Pole Support

The pole is of 2ins. square stuff and cut to any desired length not greater than 5 feet. The feet to which the pole is fixed are made up (see Fig. 4) from two pieces of board 2 feet long, halved together in the middle. The boards are 3ins. wide and ¾in. thick, and the halvings made after careful marking out with a tenon saw and chisel.

Square the lines across accurately before cutting, when these are together they should have all angles rectangular.

Fix them by means of two stout screws at diagonal corners, indicated, room being left for a long screw to pass upwards into the pole. After the foot has been so fixed, proceed to make the sloping supports, these are of 2in. by ¾in. stuff with the ends cut to 45° to fit between foot and post.

Take care to bore the holes for the nails which fix these supports or the wood will be sure to

CUTTING LIST

3	pieces	deal	21ins. by 4ins. by	½in.
2	,,	,,	17ins. ,, 6ins. ,,	½in.
6	,,	,,	13½ins. ,, 1½ins. ,,	⅜in.
1	piece	,,	16ins. ,, 1¼ins. ,,	¾in.
1	,,	,,	12ins. ,, 2ins. ,,	¾in.
3	pieces	,,	9ins. ,, 2ins. ,,	¾in.
4	,,	,,	9ins. ,, 2ins. ,,	¾in.
2	,,	,,	24ins. ,, 3ins. ,,	¾in.
4	,,	Satin Walnut	8ins. long,	¾in. square.
2	,,	,,	15ins. ,,	1in. by ¼in.
2	,,	,,	12ins. ,,	1in. ,, ¼in.
4	Brass angle brackets No. 101 at 5d. set.			

Garden Bird Table—(*continued*)

split in driving them home. Bore a hole in the baseboard of the house and run a good long screw down through it into the post.

Underneath the board there are four bracket pieces. The one immediately beneath the projecting front has its ends cut to a 45° angle, the other three must be cut roughly to length, then laid in place against the post and board, the angles thus made being marked off and cut. The lengths of the brackets are suggested (Fig. 5). These are 2ins. wide and ¾in. thick. Here again the holes for the nails for fixing must be bored to avoid splitting the wood.

the twig-wood should be added to each side slope.

If the thatch is to be of heather, these should be in small bundles tied up with grass and laid on, copper tacks being run in to hold it well down. Trim the ragged ends off with garden hand shears.

Wood for making this Bird Table may be bought from Hobbies Ltd. Special strips of satin walnut are included for certain parts of the house, such as the ¾in. square uprights and the rail that goes round them. All other parts are of deal and the whole should be coated with creosote or other wood preservative. If preferred, a green and brown paint may be applied.

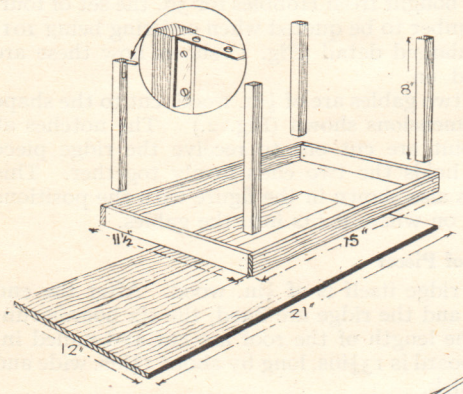


Fig. 1.—The table and its upright corner posts with a detail of the metal corner bracket.

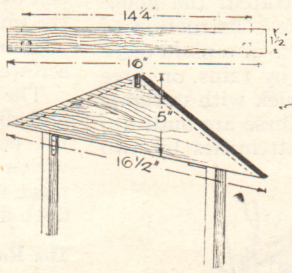


Fig. 2.—The size and shape of the gables

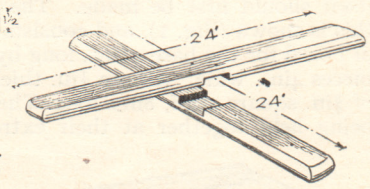


Fig. 4.—Details of how the main feet are halved together.

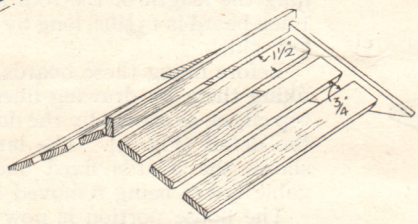


Fig. 3.—How the roof is built up.

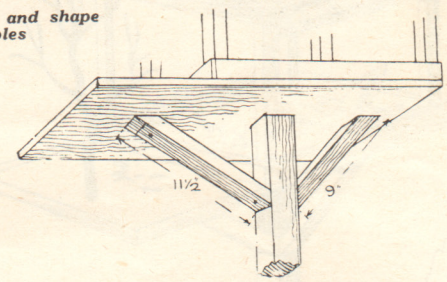


Fig. 5.—Looking under the table to show the pole and support brackets.

Note that there will be three bracket pieces 9ins. long and only one 11½ins. The two side 9in. brackets have been omitted from the sketch (Fig. 5) for sake of clearness in detail.

The table is now more or less finished and it only remains to add the thatching. If this is to be of straw, a quantity of good straight stuff should be chosen and cut to length to meet at the ridge and to overhang slightly at the lower edge or eaves of the house.

Some pieces of twig, cut the same length as the ridge, are laid over the straw thatch and tacked down with long copper tacks. Three strands of

The main post of 2in. square stuff has not been included in the price of the wood, it being thought best to get this locally. Some workers may have the post let into the ground instead of being fixed to cross feet as shown.

The price of the wood is 2/- (plus 1/- postage) and when ordered Parcel No. T.M. 295 should be asked for.

12ins. being rather wide for ordinary deal wood, it will be found that the pieces put up in the parcel are 4ins. wide, small strips of odd wood being nailed underneath to clamp them together to make the full width of 12ins.

A Tea-Caddy—(*continued from page 177*)

centre of the lid so that the stem of the knob can be glued into it.

The fret of the word "Tea" can be marked on a piece of one sixteenth plywood and cut with the fretsaw. Fix it in the centre of a side after the caddy has been stained and it will then form a contrast in colour.

CUTTING LIST

Mahogany—
Two sides—3¾ins. by 5ins. by ¼in.
Two sides, 3½ins. by 5ins. by ¼in.
One base, 3ins. by 3ins. by ¼in.
One lid, 3⅛in. by 3⅛ins. by 3/16in.
Plywood—
Four linings, 3¾ins. by 3ins. by 1/16in
15ins. of No. 122 Embossed moulding
One wood knob (No. 49).
The price of a parcel of wood can be obtained on request from Hobbies

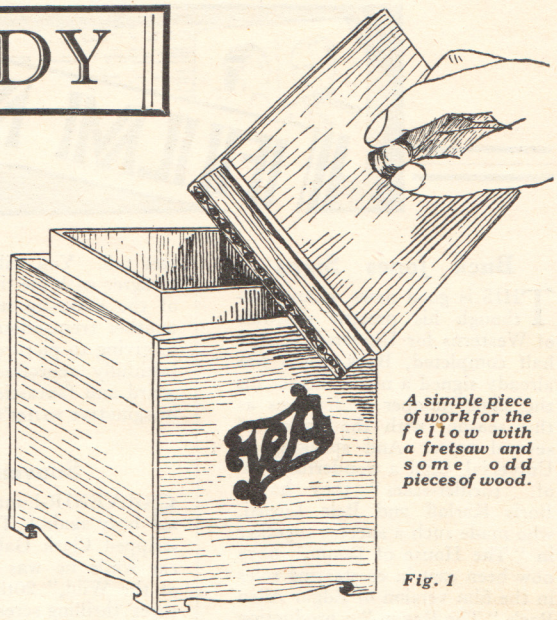
So, when the job is polished, obtain four pieces of one eighth in. plywood of size 3¾ins. by 3ins. Fit two into place opposite each other and then cut the other two to fit between them. A spot of glue on the back of each is all you need to hold them if they fit in tightly.

A TEA-CADDY

A TEA-caddy is an essential article in every home but many people use an old decorated tin, because wooden ones are too expensive to buy. It is a well known fact that tea keeps much better in wooden receptacles than when made of any other material.

The one illustrated here only costs a few coppers to make and is very neat in appearance. It can be easily made with the fretsaw and worth a position on the sideboard without looking out of place. Mahogany fretwood is used to make the caddy and the inside lining, which renders it airtight, is made of thin plywood.

It will be noticed in Fig. 1 that the lid has sides on it to fit over the linings. These sides are made from the sides of the caddy, the complete box being made first and the lid portion then sawn off. This is done to make the work easier and to ensure the lid fitting on the box.



A simple piece of work for the fellow with a fretsaw and some odd pieces of wood.

Fig. 1

The Parts Required

Fig. 3 shows the way the sides are jointed together but if you like they only need be butted and nailed, although the rebate joint shown makes a stronger job of it.

For the sides, obtain two pieces of mahogany fretwood each 3½ins. by 5ins. by ¼in., and two pieces each 3¼ins. by 5ins. by ¼in. The first measurement in each case is in the direction of the grain. On the two longer pieces mark out the rebate joints ¼in. by ⅛in. in size and cut them first across the grain with a saw and then by chiselling with the grain. If you are careful when chiselling the joints should not need any fitting.

Next plane up a piece of mahogany for the base and make it perfectly square and true to size which should be 3ins. by 3ins. by ¼in.

Then by referring to Fig. 2, the curved shapes may be marked out on the bottom of each side and cut out with the fretsaw. Each square in the diagram represents ¼in. so you should have no difficulty with the marking out.

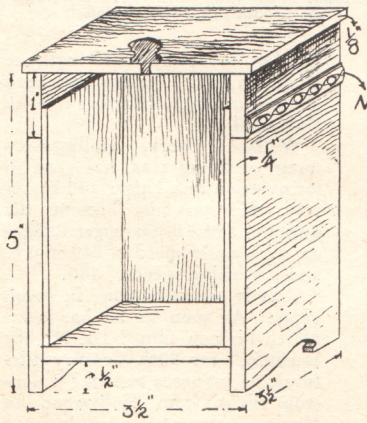


Fig. 4—Inside of caddy, showing construction

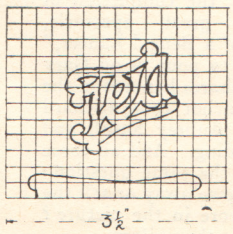


Fig 2—The sides and wording overlay.

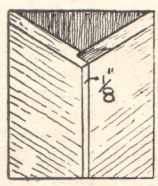


Fig. 3—Corner joints.

The top of the lid can be made of ⅛in. plywood or if you prefer to complete the job in mahogany 3/16in. fretwood may be obtained ; it's size should be 3⅝in. square.

Fixing the Parts Together

At this stage the parts are ready for assembling. Glue the joints on the sides, using Hobbies special fretwork glue, and drive a few fret nails through being careful not to split the wood. The edges of the baseboard can then be glued and the baseboard placed in position between the sides (See Fig. 4).

This can be fixed by driving nails through the sides into it. The lid can be fixed on the top of the sides similarly so that it projects one eighth of an inch all round.

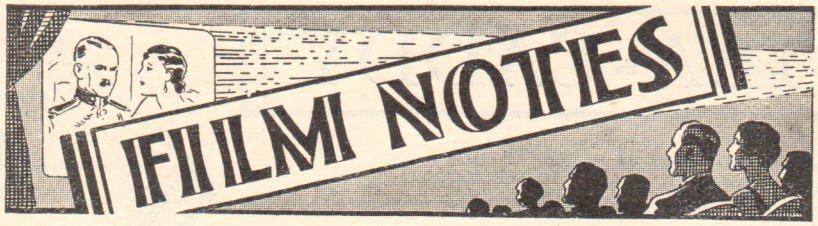
Cutting the Lid off

The next job is to separate the lid from the box and this must be done very carefully. Mark a line all round the sides four inches up from the bottom and by sawing all round the line in stages cut right through the box. The sawn edges can, if cut carefully, be easily smoothed with a file or glasspaper.

Then, to make the joint less noticeable, obtain a length of No. 122 Hobbies embossed moulding and mitre it round the sides of the lid ; then fix it on with glue and fine nails so that the bottom edge of the moulding is level with the bottom edge of the lid as in Fig. 4.

The knob (No. 49) for the lid is supplied, ready turned, by Hobbies Ltd., at a cost of one penny. This can be fixed on by boring a hole through the

(*Continued on page* 176)

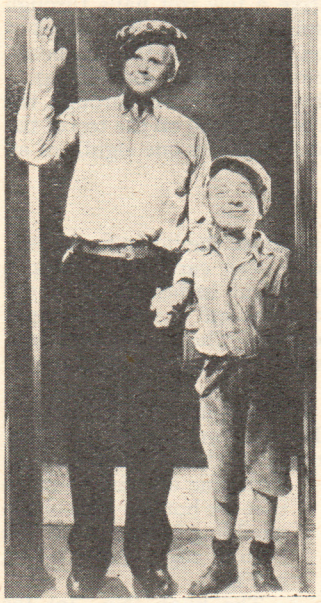


By Cinefan

Buck Jones Signs

THIS is good news, chaps. Although his present schedule of Westerns for Universal is only half completed, Buck Jones has already signed a new contract for the same number of features as this season, with the option of several more. And speaking of Universal, what a wonderful team of "thriller-stars" they have! Boris Karloff and Bela Lugosi, who made such a success together in "The House of Doom," have now been cast in co-starring roles in the film version of Edgar Allen Poe's "The Raven," a production that promises to provide something new in thrillers. By the way, keep a look-out for "The Bride of Frankenstein," which has just been completed.

Frankenstein himself, when he first appeared on the screen, made strong hearts miss a beat, but it is safe to say that Elsa Lanchester,



A stunt portrait of Wallace Beery and Jackie Cooper in reverse positions!

who plays the part of the monster's mate, will thrill and startle the world. In her complete make-up for this film she is nearly seven feet tall. You will be compelled to agree with me that this miracle of the make-up man's genius is another tremendous step forward in giving to pictures the power of faithfully reproducing the most weird and fantastic figures of the imaginative writer's creation.

Souvenirs

SOUVENIR-hunters have been busy again! They completely stripped Clark Gable's expensive car while he was making "Call of the Wild," 20th Century Pictures' thrilling screen record of the Alaskan gold rush.

Hurrying to the United Artists studios one morning, Gable felt a hot gust of air on the back of his neck. He looked round to find the entire rear end of his car sheathed in flame. Pulling over to the curb, Clark stood by keeping the quickly gathering crowd from closing in. He had just put 20 gallons of petrol in the tank, and feared an explosion.

Someone, meanwhile, broke a fire alarm. When the fire engines screamed up, Gable grabbed a cab, dashed to the studio and telephoned his chauffeur to pick up the wreck. And it certainly *was* a wreck by the time the driver arrived. Clark Gable had been recognised and the crowd of enthusiastic, but appallingly thoughtless fans, had completely stripped the car of everything movable, even to the scorched upholstery.

They Even Collect Uniforms

YOU wouldn't believe the lengths to which some enthusiasts go in their souvenir-hunting efforts. With the completion of Paramount's great spectacle, "The Lives of a Bengal Lancer," letters began to pour in on Gary Cooper, who shares honours in the film with Franchot Tone, Richard Cromwell, C. Aubrey Smith and Sir Guy Standing. And all these letters asked the same question: Would Gary give away or sell the uniform he wore in the picture? And it must be *the* uniform..... anyone else's would not do!

This actor has probably worn more uniforms than any star in movies. He was an aviator in his first big picture, "Wings." Then came periods of service in the Foreign Legion in "Beau Sabreur" and "Morocco."

At the finish of the latter film he was inundated with letters asking for his uniform.

Shots from the Studios

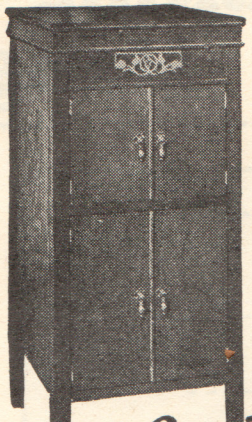
FRANK Moran, the ex-heavyweight boxer who achieved fame in a night when he knocked out Joe Beckett in five minutes in

Cliff Edwards' wonderful invention! Drop the mouse in the tube; the dog follows and the broom plays the ukulele!

London, is rapidly achieving fame as a film star. He has just been allotted another character role by Universal.

Wallace Beery, Hollywood's foremost flying star, has gone in for aviation in a bigger and better way. He has just become the owner of a new 6-passenger Bellanca, with a top speed of 240 m.p.h. and a cruising speed of 180.

This is his fifth plane in seven years. As soon as he has completed his new film "The Mighty Barnum," for 20th Century Pictures, he proposes to make a non-stop flight from Hollywood to Mexico City. Some goer, our Wally!



Satisfaction

There is a wonderful sense of satisfaction in a good job well done. The wood has been well chosen and carefully wrought—joints tight and the surface glass-papered to the feel of fine silk . . . You cannot—must not—risk spoiling it in the "finish."

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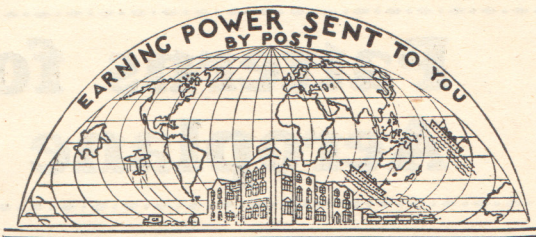

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SIGNS of the TIMES

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Motor Engineering
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62, THE BENNETT COLLEGE, SHEFFIELD

Patterns for making a Mod
Aeroplane and Hangar in

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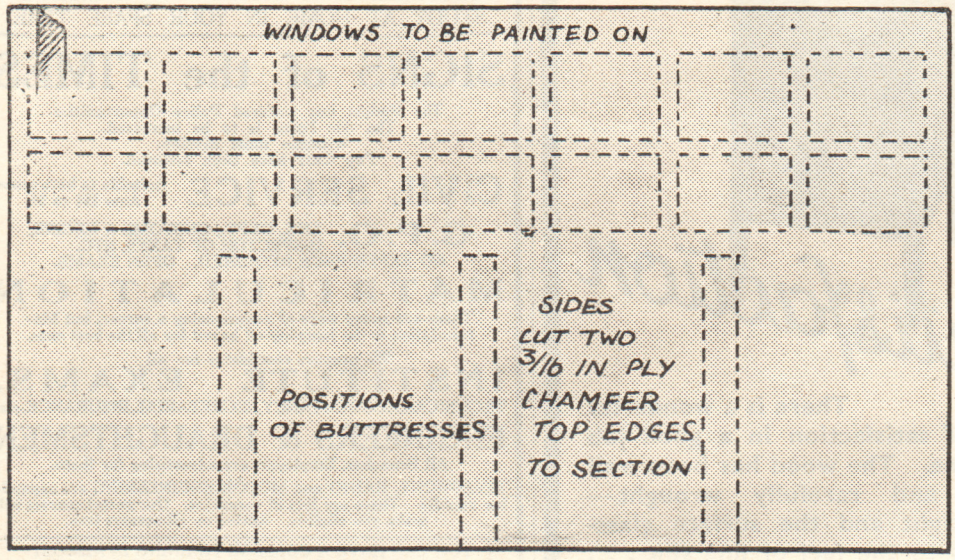
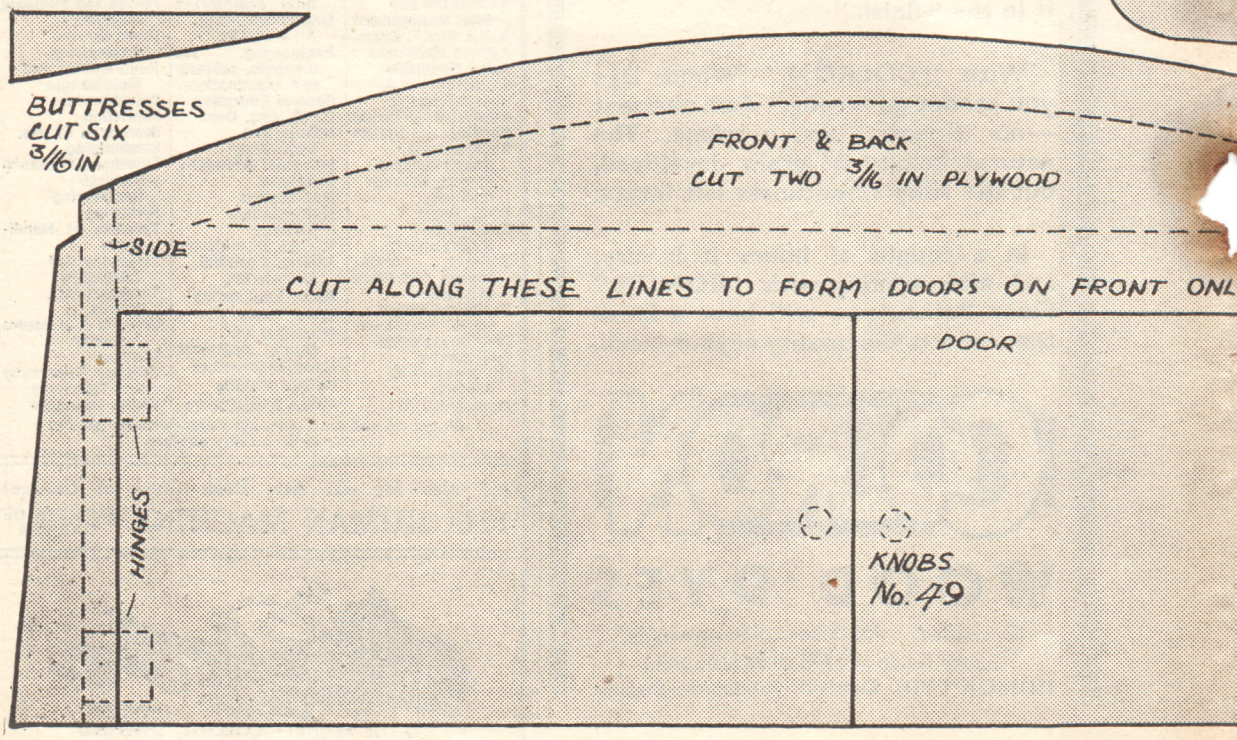
little

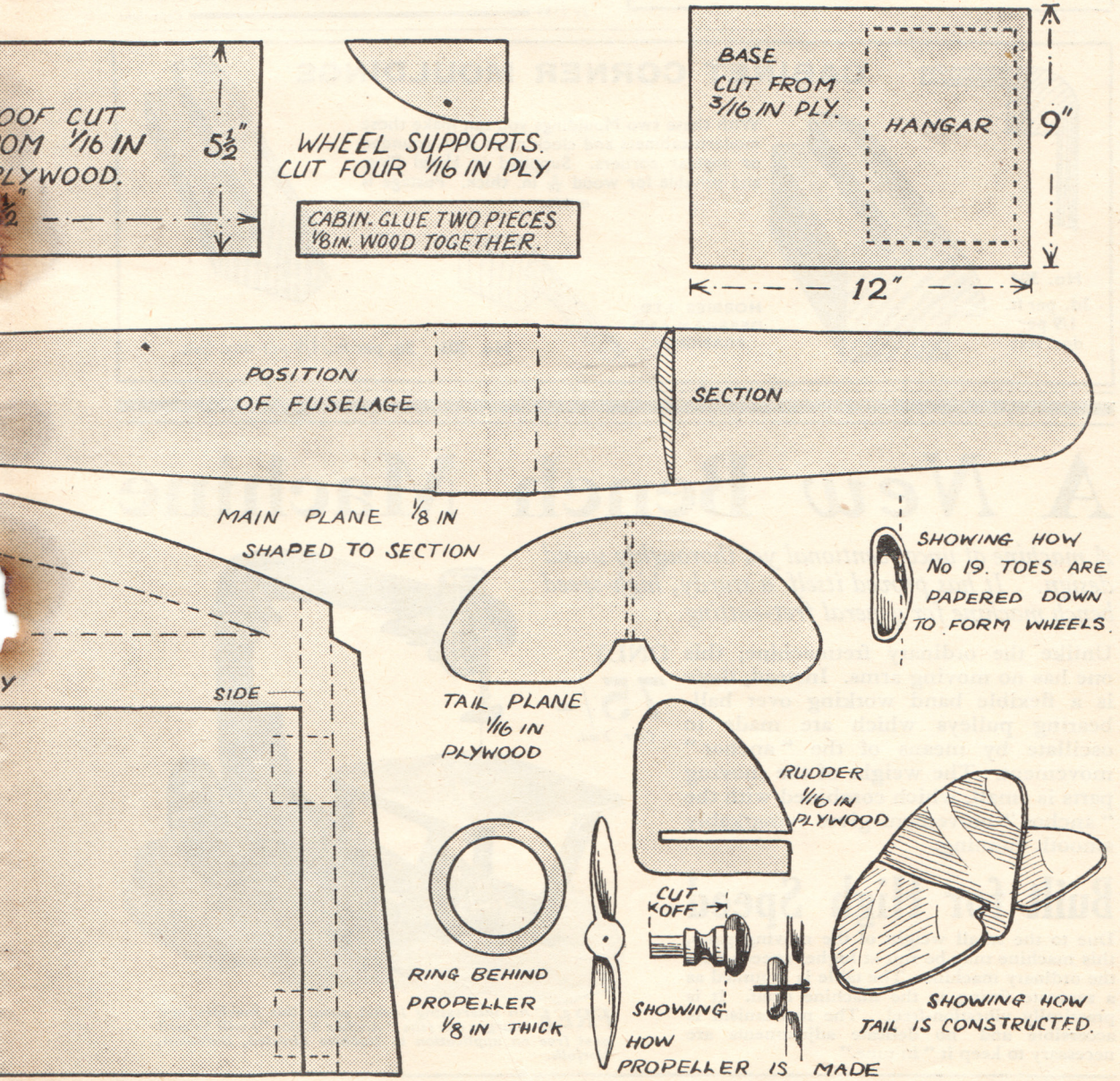



BUTTRESSES CUT SIX 3/16 IN
FRONT & BACK CUT TWO 3/16 IN PLYWOOD
SIDE
CUT ALONG THESE LINES TO FORM DOORS ON FRONT ONL
DOOR
HINGES
KNOBS No. 49

lel Wood

DESIGN No. 2066

is a novel little model to make. It is of a complete low wing monoplane, the r in which to house it and the whole flying field. It can be easily made in wood at cost and full particulars for building are given in the illustrated instructions on page 171



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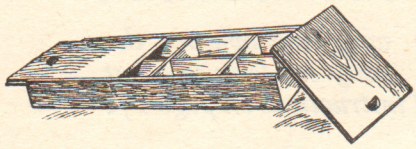

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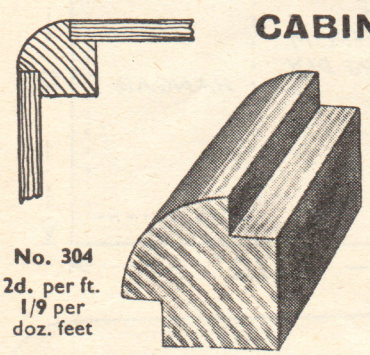

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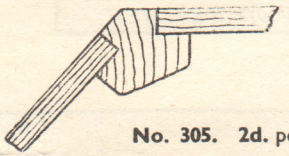

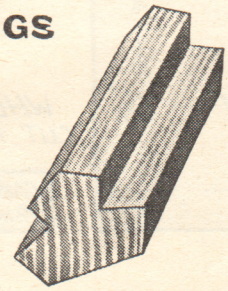

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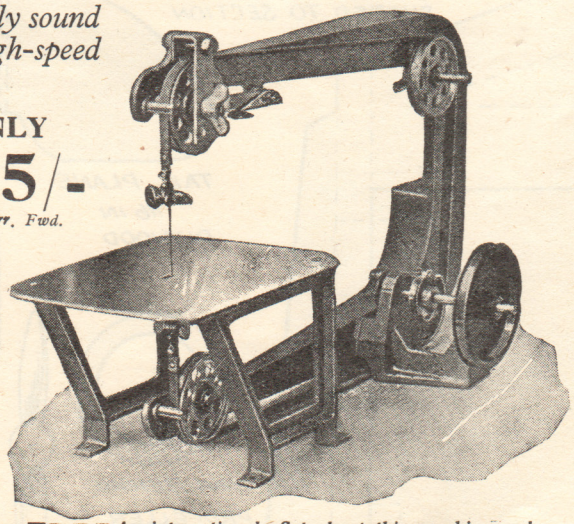

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HOW TO TAKE GAMES OR SPORTS

HIGH speed photography, such as that required when photographing Sir Malcolm Campbell and his " Blue Bird " at a speed of over 200 m.p.h., is a class of work beyond the scope of any but the expert in that particular branch. But the photography of sports and games can be undertaken quite well by any amateur photographer, provided he realises the limitations of his camera.

Obviously, it is no use trying to photograph motor bikes on a speed track with a camera whose fastest shutter speed is 1/25th of a second ! The result can only be an unrecognizable blur. It is necessary to understand what one's camera can do and to keep within those bounds.

Snap with the ball in mid-air.

To begin with, let us take the cheapest form of box camera. As a rule these little instruments have a lens working at about F11 or F16. That means the lens has a very small aperture and consequently admits only a small amount of light. In other words, the lens is ' slow.' Now if the lens admits but little light in order to obtain a fully exposed negative, it will be necessary to give a comparatively long exposure.

As a matter of fact with this class of camera, the fastest shutter speed is generally in the region of 1/25th of a second. That is why the owner of a cheap camera cannot take high speed ' sports ' at their fastest moments. But there is no reason why these should not be taken provided the moment is chosen for doing so with care. Think for a moment of the times when action seems suspended—often the most exciting moment of the game.

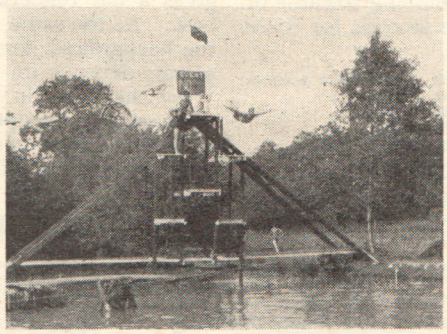
For instance, in tennis after the server has thrown up the ball, there is a distinct pause before the racquet smashes down on it. Again, in a rugger scrum, there is sometimes for a second or two practically no visible movement at all. In each of these instances a slow lens with a shutter working at 1/25th of a second could easily record the action without a trace of movement showing.

There are also many slower sports and games which are eminently suited to the cheaper camera. In golf, every movement is leisurely, with the exception of the downward swing of the club. Golf courses are usually laid in the most lovely parts of the country, and form ideal picture making material in themselves. When ' human interest ' is wanted and golfers are introduced, they are of course in keeping with their surroundings. On the other hand, if one wishes to show a game actually in progress, it is advisable to persuade friends to pose suitably ; golf is a nervy game and the presence of a photographer might be resented if approaching too close to the players.

Fishing is another sport which is usually indulged in amid beautiful surroundings and fine pictures can be made of this ' gentle art,' for which no high speeds are needed.

Fox hunting is quite within the scope of the box camera provided the operator is content to make most of the picture met. Here horses and hounds will keep comparatively still and generally pose themselves perfectly. A friendly ' whip ' will often give information as to which covert is to be drawn, and the photographer can then move off in that direction and so get a good ' shot ' of the hunt coming towards.

Beagling also offers many opportunities,



The time for a diving picture.

A simple slow shot.

and one can follow here and get many interesting pictures. The meets usually takes place about 11 o'clock, when the light is at its very best, but these subjects all need sunshine if they are to make good pictures.

With a camera whose lens works at F8, the scope is very much increased. With the extra light admitted by this aperture one can, with safety, give

much shorter exposures, and so take subjects moving at greater speeds; while with a lens of F6.8 or F4.5 even faster sports can be attempted.

When calculating which speed of snapshot to use, one has to bear in mind not only the speed at which the subject is moving, but also the distance from the camera and direction. The further away one is, the longer may be the exposure without blur occurring. A figure moving directly towards, or away from the camera, shows less movement, and can be given three times the exposure of one moving across the line of vision.

The following table may help. It applies to objects at a distance of 25 feet from the camera. The first column is for objects moving towards or away from the camera, and the seconds for those moving across the field of vision.

Persons walking 4 miles per hour	*1/40*	*1/120*	*of a second.*
Persons walking 6 ,, ,, ,,	*1/60*	*1/180*	*,, ,,*
Persons walking 8 ,, ,, ,,	*1/80*	*1/250*	*,, ,,*
Foot Races	*1/240*	*1/700*	*,, ,*
Cycle Races	*1/300*	*1/900*	*,, ,,*

With this information in mind, it is obvious that if one has not a fast lens and shutter, it is best to choose a position where most of the movement will be towards or away—naturally the former is preferred. Thus at football, a position close to one of the goals is preferable to one on a side line. At school sports try to take either the beginning of a race, or the end of it from behind the tape, rather than a shot from a place midway where the runners will cross one's view at right-angles.

School sports offer valuable opportunities for photography. One of the most satisfactory, as well as the easiest, being the high jump. Here, if one snaps at the moment the jumper is above the pole, he may be caught against the sky, which makes an admirable background. If one stoops down to take this, the apparent height of the jump is increased.

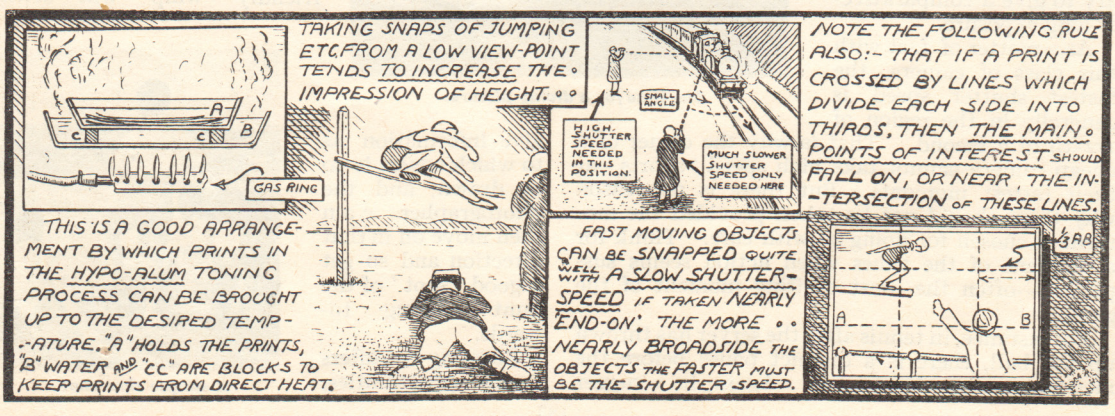
The light has always to be considered when choosing position. The sun must not shine directly on the lens as it may cause fog; besides

Two pictures of simple shots where movement is fairly slow.

this, if the shadow side of the players is towards one, a much longer exposure is needed. On the other hand, the light directly behind the camera gives a flat rendering. A side light is generally best. At the same time one has always to notice the background, for much of the success of a sports picture depends on the players showing up well.

By the way, do not forget to enter the May Photographic Competition which closes soon. The subject is any snap on or around a farm and worth while prizes are offered in the open and junior section.

OUR WEEKLY PHOTOGRAPHIC PICTURE STRIP


TAKING SNAPS OF JUMPING ETC. FROM A LOW VIEW-POINT TENDS TO INCREASE THE IMPRESSION OF HEIGHT.
A
B
C
C
GAS RING
THIS IS A GOOD ARRANGEMENT BY WHICH PRINTS IN THE HYPO-ALUM TONING PROCESS CAN BE BROUGHT UP TO THE DESIRED TEMPERATURE. "A" HOLDS THE PRINTS, "B" WATER AND "CC" ARE BLOCKS TO KEEP PRINTS FROM DIRECT HEAT.
SMALL ANGLE
HIGH SHUTTER SPEED NEEDED IN THIS POSITION
MUCH SLOWER SHUTTER SPEED ONLY NEEDED HERE
FAST MOVING OBJECTS CAN BE SNAPPED QUITE WELL WITH A SLOW SHUTTER-SPEED IF TAKEN NEARLY END-ON. THE MORE NEARLY BROADSIDE THE OBJECTS THE FASTER MUST BE THE SHUTTER SPEED.
NOTE THE FOLLOWING RULE ALSO:- THAT IF A PRINT IS CROSSED BY LINES WHICH DIVIDE EACH SIDE INTO THIRDS, THEN THE MAIN POINTS OF INTEREST SHOULD FALL ON, OR NEAR, THE INTERSECTION OF THESE LINES.
⅓AB
A
B

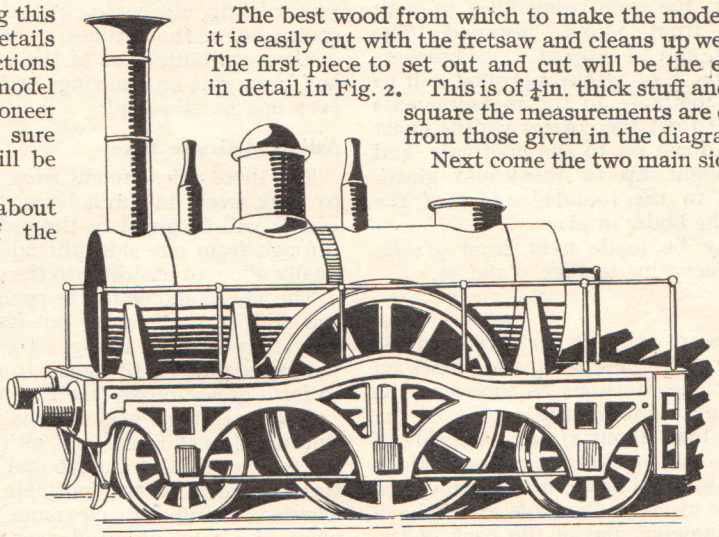
A MODEL OF THE NORTH STAR LOCOMOTIVE

WE are giving this week, details and instructions of how to build a model of one of our old pioneer engines, and feel sure model builders will be pleased.

A word or two about the prototype of the model will not be out of place.

The "North Star"—for such is the name of this quaint old engine—was one of our earliest locomotives, and indeed one of eight which formed a procession at the opening of the Liverpool and Manchester Railway in Septtember, 1830. The Duke of Wellington, being then Prime Minister, performed the opening ceremony. All the engines were built by Stephenson, the celebrated engineer, who, himself, drove the first one in the procession.

We have chosen this engine because it is fairly simple in outline and lends itself to the amateur model maker in wood. It is one that will delight the eye of the builder when finished and prove of genuine assistance in future models.



General Details

The outline diagram or elevation of the engine is in Fig. 1, and after a study has been made of the sketch, this elevation, with the measurements given, should be taken into consideration before commencing to build the model.

All the parts are of wood, except the boiler, which consists of stout cardboard or thin ply cut from a 'tube' or carton obtainable from almost any stationer's shop. The handrails along the boiler are, of course, brass wire, while the funnel is of round dowelling with a portion cut from an ordinary small cotton reel to form the cap. The dome on top of the boiler also consists of a cotton reel with the half-round piece on top formed by cutting a wood ball in halves and gluing one piece to the reel.

The small projecting circular piece at the rear of the boiler is a piece cut from a reel while the two upstanding steam nozzles might be shaped up from ⅜in. diam. dowelling.

WOOD REQUIRED

1 piece Satin-Walnut 9½ins. by 4ins. by ¼in.
1 piece Plywood 3/16in. 9½ins. by 5ins.
1 piece Plywood, 3/16in., 10ins. by 6ins.
1 piece Plywood 9ins. by 6ins, Wheels.
1 piece Plywood ¼in., 9ins. by 6ins., Wheels.
14ins., ¼in. diam. rod for axles.
1 piece 1/32nd plywood for bending, 6ins. by 4ins.
1 piece ⅜in. dowelling (or ½in.) 6ins. long.
5 feet of stout brass wire for handrails, etc., will also be required.

The best wood from which to make the model is satin walnut as it is easily cut with the fretsaw and cleans up well with glasspaper. The first piece to set out and cut will be the engine bed, shown in detail in Fig. 2. This is of ¼in. thick stuff and with the aid of a square the measurements are drawn on the wood from those given in the diagram.

Next come the two main sides or wheel bearings, and one of these is shown in the squared-up diagram Fig. 3.

On a piece of 3/16in. plywood set out the ½in. squares shown and follow these carefully for the drawing in of the working outline and the simple interior frets.

Ascertain the positions of the centres for the wheel axles and for the curves of the sides. The latter are marked in small circles and may easily be fixed in relation to the squares. The small dotted lines on the outline of the side in the three places, show where the thin wood overlays forming the grease boxes are to be glued on.

After pencilling in these dotted lines, prick in the corners of each so when later on, after the whole has been cut out with the fretsaw and cleaned, their positions are still plainly seen.

The Buffers

Fig. 4 shows how the sides are fixed to the footplate, while Fig. 5 give the measurements for the buffer plate of 3/16in. plywood at the front of the engine. The positions for the buffers are shown dotted, but these will not be shaped and glued until later.

Glue the buffer plate on and then draw out the shape of the 'guard' shown at Fig. 6. This will be in 3/16in. plywood and two are required cut together. The short pieces of wire acting as supports must be cut off to length, which is found after the two guards have been glued in between the buffer plate and the footplate. Flatten the ends of the pieces of wire and drill small holes to take round-headed screws.

The top end of the pieces of wire can be screwed either behind the buffer plate—that is, from inside—or on the outside of the plate immediately to the one side of the buffers, the positions of

which should have been previously marked.

The Boiler

The boiler is cut from a card 'tube' or carton 2¼ins. in diameter, the ends being filled in with round discs cut from 3/16in. plywood. The boiler is 7ins. long, and to support it six brackets cut as shown in Fig. 8 of 3/16in. plywood will be spaced along the footplate to the measurements given in Fig. 1. To get the correct widths apart the boiler is held down on to the footplate and the brackets brought up to these and glued. Next, apply glue to the rounded edges of the brackets and lay the boiler in place.

The wheels may be made next from 3/16in. plywood and cut according to Figs. 9 and 10.

The Wheels

The large wheels are 3½ins. in diameter and the small ones 1⅞ins. After describing the circles on the wood, set out the divisions as shown on the left of the diagrams. Fill in the spokes of the wheels by running lines about 1/16in. each side of these guide lines and make their connections towards the centre all meet on a circle drawn with a radius of ½in. The inside of the large wheels have circles of 3⅛ins. diameter, and at the back of the rim of each wheel so formed a projecting flange must be made by cutting out rings of ⅛in. thick wood glued to the backs. The diagrams also show the ¼in. holes made in the centres for the axles.

Having made the outlines and drawn in all the spokes accurately, cut each with a fretsaw, remembering always to cut the pieces between the spokes before the outlines.

Clean up both sides of the wheels after cutting and then glue on the rings or flanges, keeping an even margin all round.

Axles and Grease Boxes

The three axles are cut from ¼in. rod, 4ins. long to work freely in the holes in the bearings. The wheels will be glued to the rods. Push each rod through from one side, thread on the wheels and finally allow to project into the opposite bearing.

The wheels should not be pushed hard up against the sides of the bearing but have a little play so they may revolve freely. To cover the ends of the axles, glue on the small square blocks of wood to form grease-boxes (see Fig. 13).

Over each big wheel there is formed a casing of thin wood bent round and on to a circular shaped rib (Fig. 11). Cut the rib and test the shapes by standing them on the footplate just alongside the wheels. If sufficient clearance is allowed, bend a piece of 1/32nd plywood over and glue it to the edge as in the detail Fig. 11. Allow a good width for the plywood so that portion which comes against the boiler may be cut and shaped to it.

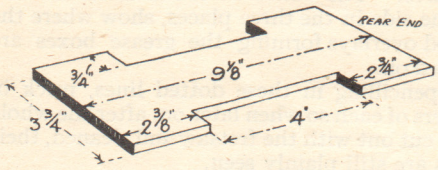


Fig. 2.—The engine bed.

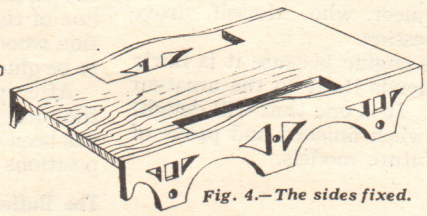


Fig. 4.—The sides fixed.

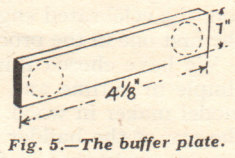


Fig. 5.—The buffer plate.

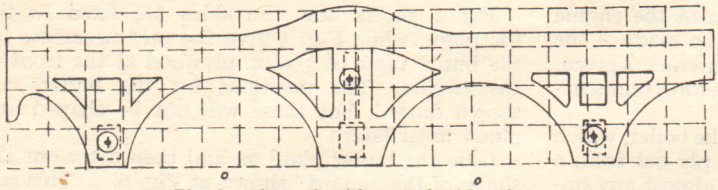


Fig. 3.—The main sides or wheel bearings.

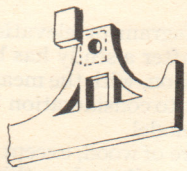


Fig. 13.—The axle covers.

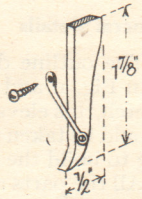
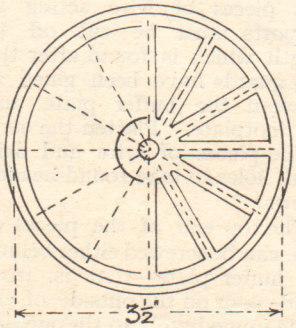
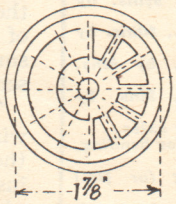


Fig. 6.—The rail guard.





Figs. 9 & 10.—How to draw out the wheels.

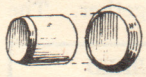


Fig. 13.—The buffers.

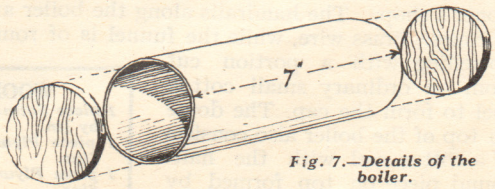


Fig. 7.—Details of the boiler.

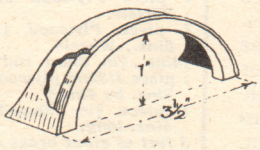


Fig. 11.

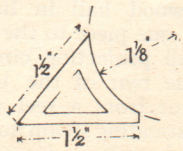


Fig. 8.—Boiler Brackets.

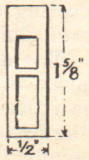


Fig. 12.

"North Star" Model—(*continued*)

Glue on the completed guards and run screws through the footplate into the circular ribs at each side.

A final test of the wheels should be given, to see that they revolve freely if placed on a set of rails. If a length of rails is made for the model, the width between them inside is 2¾ins., which allows the flanges of the wheels to come in.

A length of stout brass wire connects each of the arched bearers of the wheels. Each piece of wire is 6½ins. long and rests in shallow grooves in the extremities of the axle boxes. Small staples of wire pointed at one end and driven into the wood at the side of the grooves hold them firmly in place.

The handrails on each side of the boiler are of brass wire 9ins. long with six uprights pointed at one end and driven in gently into holes made ready for them along the edges of the footplate. The handrail rests upon the uprights and is soldered on. The ends of the upright wires may be flattened and bent round the handrail.

The funnel is formed from a piece of ⅝ or ¾in. dowelling 2¾ins. long with a capping on the top formed by the end off a cotton or silk reel. The bandings may be drawn on in pencil or ink. The steam dome is an empty cotton reel shaped at the lower end to saddle over the boiler correctly. The top dome is made from a wooden ball turning cut in half and one piece glued on.

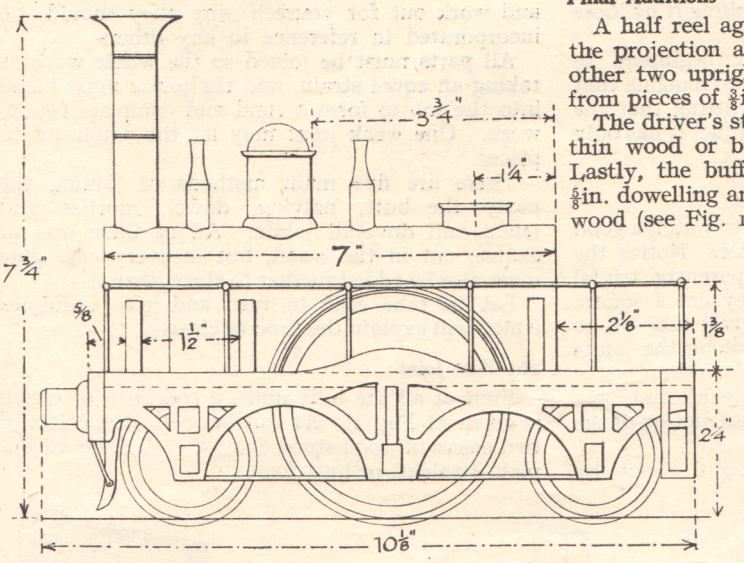


Fig. 1.—A side elevation showing position of parts.

Final Additions

A half reel again saddled over the boiler forms the projection at the end of the boiler, while the other two uprights may be formed up as before from pieces of ⅜in. diameter dowelling.

The driver's step (Fig. 12) is cut from a piece of thin wood or brass to the measurements given. Lastly, the buffers may be shaped from ½in. or ⅝in. dowelling and glued to shaped discs of 3/16in. wood (see Fig. 13).

The finished model may either be painted or varnished. The boiler should be lined realistically and the edges of the footplate also lined in carefully to give a panelled and riveted effect.

If readers desire fuller information or advice about this model they should write to the Editor who will readily help, upon receipt of particulars and their enclosing stamped addressed envelope.

The Art of Fretwork—(*continued from page* 189)

a very long slot and there is sometimes a tendency for the part to gape. An example is given at Fig. 6, where the narrow neck of wood is apt to open at the joint if additional strength is not given.

Before finally gluing them together, therefore, bore a hole in the edge to take a long screw and drive this carefully through from one side nearly to the other. In this you close the gap and make a secure joint as well.

A very common form of joint is the mortise and tenon—illustrated at Fig. 7. Here we have one piece with a little projecting tongue (A) which fits into the corresponding slot (B). The projecting piece is the tenon and the opening the mortise.

Two Styles

In some instances the tenons project beyond the board into which they pass, but more generally, they finish flush. The two styles are shown at Fig. 8, and it will be noted in the case of the projecting tenons, that the top edge is rounded off to make it more ornamental.

When the tenon is to finish flush with the back of the board, as at A, the length of the tongue must be the same as the thickness of the wood into which it is put. It is, of course, best to cut it a little longer if possible and then to clean it down with a file or paper until it is perfectly flush with the rest of the surface.

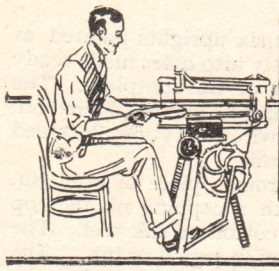
The making of a good mortise and tenon, is unfortunately, not often found among beginners, and in competitions it is often a noticeable fault which immediately robs the entry of many valuable points.

Common Faults

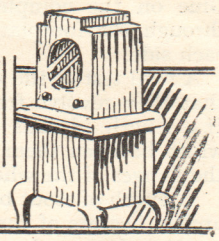
The common faults are that the lines are not cut true or that the tenon does not fit nicely into the mortise, but leaves a gap at the ends or sides or both. An illustration of these points is given at Fig. 9.

When you cut a tenon, lay a rule along the line marked A-B and see the cutting edge is true, not with one side higher than the other, as is in the case of the diagram.

(*To be continued.*)



THE ART OF FRETWORK



12th ARTICLE

Some Types of Joints—Butt — Halving — Mortise and Tenon—Hints on Cutting—Common Faults.

HAVING dealt with the question of cutting out the parts of fretwork designs, we can turn our attention to the methods of construction. Needless to say, this requires as much care as any part of the work because it is useless taking a lot of pains in the cutting and then spoiling it by loose and careless construction.

There is a tendency amongst beginners to overlook this important point, and to imagine that when they have completed their cutting that the job is almost done. As a matter of fact it has only just begun.

How to Learn

It is an education in this respect to watch a good class of cabinet maker or carpenter. Notice the time and care they take on apparently trivial matters; the number of times they use a square and rule; the tiny shavings they will take off to ensure a good fit; the tender feel along the joints to see they are flush and finished.

Remember the point in your fretwork and have patience in finishing the general construction of the work.

Now this construction is brought about by several methods, each of which has its place and its reason. First of all, study several designs and note the joints used, and work out for yourself why they should be incorporated in reference to any others.

All parts must be joined so the whole work is taking an equal strain, and the joints must blend into the job to form a rigid and complete framework. One weak joint may let the whole lot to pieces.

There are five main methods of joining the parts—the butt, halving, dowel, mortise and tenon and dovetail joints. All of them are, of course, cut in the wood, but in every case glue must also be added further to strengthen it.

Let us take each in turn and give examples which will explain the process clearly.

The Butt Joint

First of all the butt joint, a specimen of which is given at Fig. 1. As can be seen, it consists of two pieces of wood stood against each other with a plain straight, or butt joint.

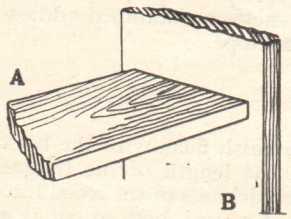


Fig. 1.—The butt joint.

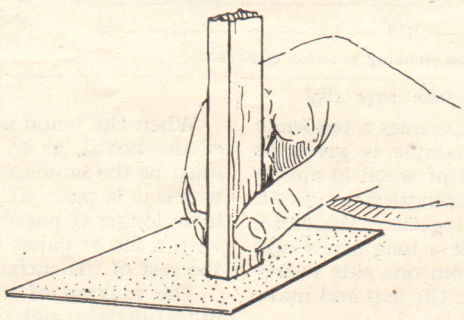


Fig. 2.—How to paper work to prevent rounding

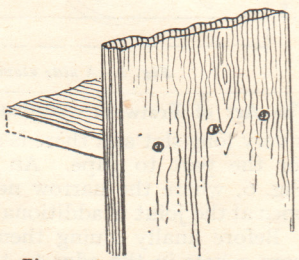


Fig. 4.—Screw to strengthen a plain joint.

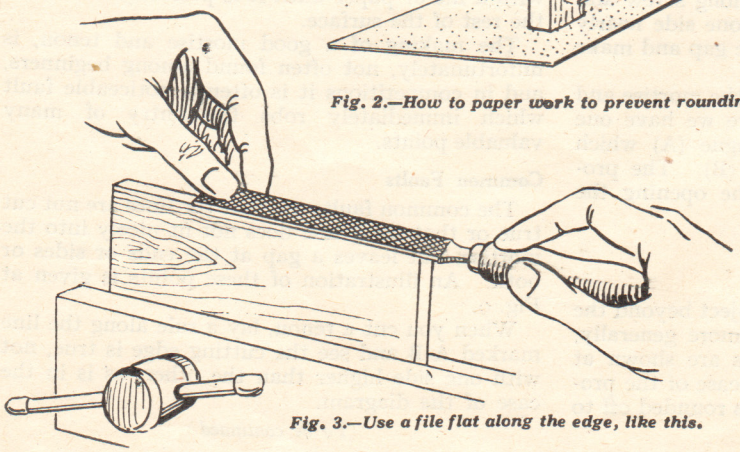


Fig. 3.—Use a file flat along the edge, like this.

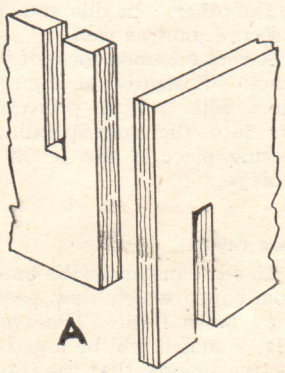


Fig. 5.—The two parts of a halving joint.

It is obvious here that the edge of the piece marked "A" must be dead straight or it will not " bed " down to the flat surface of " B " evenly.

The straight line of the edge can be cut by anyone experienced with the fretsaw, but at first it is a little difficult. If the beginner finds his edge is wavy, he must get it flat on the bench as shown at Fig. 2. Hold the paper down with drawing pins and be sure to keep the wood upright If you do not, the edges will become rounded.

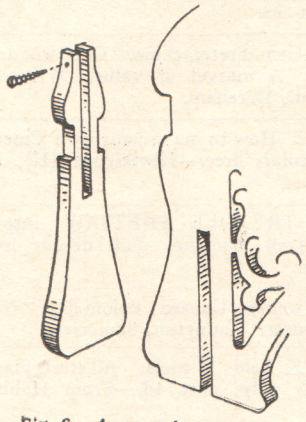


Fig. 6.—A screw to prevent a gaping joint.

Another method is to run a long, flat file along the edge (see Fig. 3) keeping it carefully down to the surface until an even straight line is obtained. Hold the wood firmly in a vice during the operation.

Of course, another method of obtaining flat edges, is to run a small plane along it until an even shaving is run off. This, however, requires a certain amount of skill in order to keep the plane level and true on the comparatively thin wood used in fretwork.

To test the edge is true, stand it in place where it is to be glued and hold the work up to the light. If you can see daylight between the parts you know it is not correct and must be cleaned again until nothing can be seen between the two.

Strengthen with Screws

Obviously, this class of joint is not too good in thin wood, and wherever possible further strength should be given by adding a few screws through the back as shown in the illustration in Fig. 4.

Take care, of course, to keep the holes in line with the centre of the adjoining edge piece, and bore the holes carefully into the end grain before driving them home. Nails can be used as an alternative, but they are not so strong, although they can be driven in on the slope if necessary, to get a better grip.

Now let us turn to the halving joint illustrated at Fig. 5. Here we have a long open joint cut half way in each piece in the opposite directions

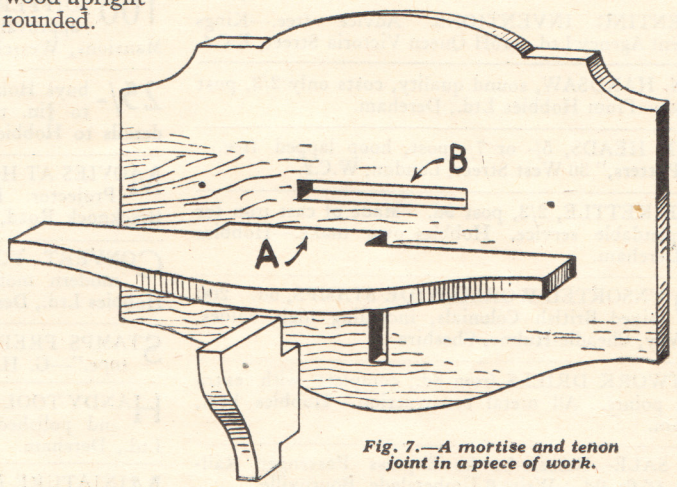


Fig. 7.—A mortise and tenon joint in a piece of work.

as at A. To put them together, the pieces must slide into each other to make a rigid joint at B.

The width of the slots cut, of course, is always the same as the thickness of the wood, and this point should be tested out on any design pattern before the parts are cut. Check off your thickness of wood and then use the compasses to note the corresponding halving slot is of the same dimension.

In cutting, keep to the line carefully, because again, a nasty gap will show between the parts if not. The parts should slide together with a gentle pressure ; it is never advisable to drive them home with a hammer or the wood will slit.

In most cases where this joint is used, the grain of the wood runs the same direction as the slot to be cut. This gives strength to the parts because it will be readily realized that the narrow portions would be weak if the grain of the wood ran across them.

These halving joints, are often used in tall upright vases, where the central member consists of two main pieces. This involves the cutting of

(*Continued on page* 187)

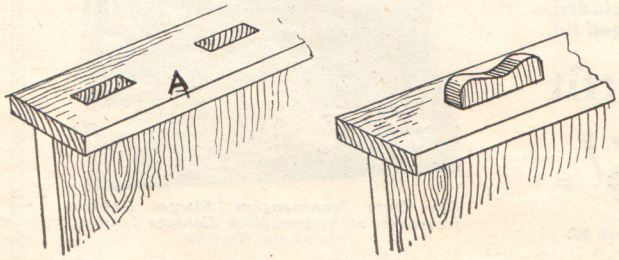


Fig. 8.—The flush and projecting type of tenon

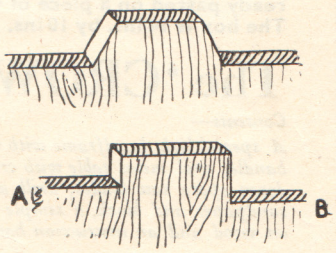


Fig. 9.—Two common faults in cutting—purposely exaggerated.

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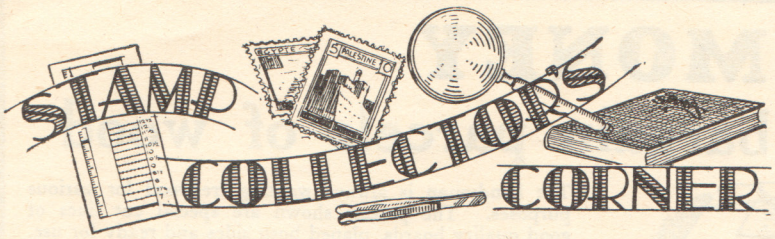


A TRAVEL TRIP ROUND EUROPE

A Pleasure Trip Round Europe.

A FEW weeks ago we set out on a trip from London to Singapore by Air route, or at least following the air route in the stamp album, and a very interesting trip it made One disadvantage of such a trip is that you have to go along

Norway

the route on which the Airways Company have already decided what you will see. This week we are going on our own, we shall travel just where fancy takes us, maybe part of the way by boat, perhaps the train may suit us better, though if we are to see everything of interest, then we must employ our legs.

Denmark

As we are on pleasure bent, let us start towards the north and view that region that so many go to see at midsummer—' The land of the midnight sun.' North Cape is eight or nine degrees north of the Arctic Circle, and is the most northerly point of Europe.

Norway in 1930 issued a set of three stamps showing this point, the three postal values being 15, 20 and 30 ore, they were sold at 40, 45, and 55 ore, the extra amount being given to the Norwegian Tourist Association Fund. There is not much point in journeying further north unless Arctic Exploration is intended, and the route south may be taken by the marvellous Norwegian Fiords, the original home of the Vikings.

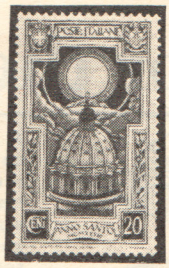
On the way south to warmer regions a call at Helsingor in Denmark, on the island of Zealand will recall to our minds that English bard ' William Shakespeare ' for the scene of his famous play ' Hamlet ' is set at the castle of Kronberg, this castle forms the subject of the design of the 1920 issue from Denmark. Few English people would go close to this place without making a detour to visit the castle—actually in the play it is called Elsinore.

The journey from the flat country of Denmark may most interestingly be made by boat to Holland and then continue up the river Meuse to Dinant, a little town at the base of very fine cliffs and which is much frequented in Summer by Belgian, Dutch and other visitors, who make this a centre for excursions into the Ardennes.

Belgium

The 40c stamp of the 1915 issue of Belgium gives an excellent impression of the

Switzerland



Italy

charm of this spot.

Journeying on in search of more mountain scenery, let us turn to the pages of Switzerland and look at the set issued in 1934 and we have : first a mountain waterfall (Staubbach) then Mt. Pilatus, Grimsel Pass, the Gothard railway, Viamala Gorge, the Rhine waterfall near Schaffhausen, and also the Castle at Chillon with the Dents du Midi in the background ; this last is the one selected for illustration, for it was at the Castle of Chillon that Bonnivard — the defender of Geneva—was kept prisoner for six years by the Duke of Savoy, the tale of which is told by Lord Byron. It seems a pity that these stamps are so small, such marvellous scenery do they portray.

Having gone as far south as Switzerland, one could hardly retrace one's steps without going the little extra distance necessary to visit Italy, and then having reached this country, what a wealth of famous towns from which to choose.

Venice immediately jumps to mind, but then we have passed over many miles of low lying country when we journeyed from Denmark up the Meuse to Dinant, so let us leave Venice and go to Rome and see the largest church in Christendom—St. Peters—with which the names of Raphael and Michaelangelo are associated. St. Peters occupies the site of Caligula's Circus in which Nero tortured the Christians—it covers 18,000 square yards and is 435 ft. high, so large indeed that St. Paul's Cathedral, London, could be re-erected inside it.

Curious land formations are not often adopted as subjects of the design of stamps—beauty spots, high mountains and lakes certainly, but surely the design of the French 90c stamp of 1929-1933 must tempt many people to make the journey to see such formations.

These extinct volcanic craters are distinctive features of the landscape ; Le Puy en Velay consists of a new town on the flat land the old town built on the abruptly

France

sloping puy or hill—the streets are so steep as to be impassable for carriages, and the highest point is crowned by a colossal statue of the Virgin, cast from cannon captured at Sebastopol.

From Le Puy en Velay let us go to another rock—The Rock of Gibraltar, a view of which is seen on the 1931-1933 stamps of this Crown Colony. This rock is 1,400 ft. high and was secured in 1704 by Sir George Rooke.

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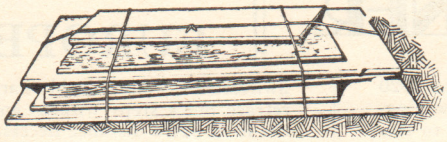

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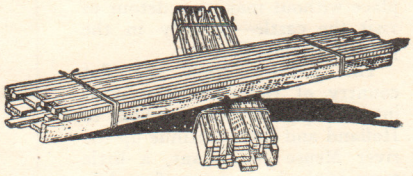

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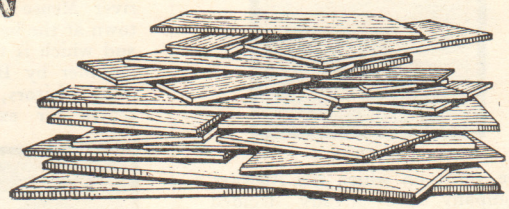

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Planes for the handyman

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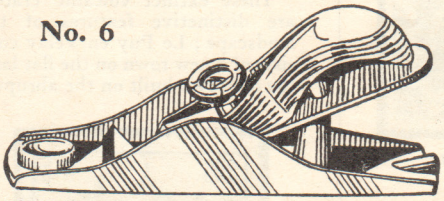

A plane is as necessary to a handyman as an engine to a motor-bike. But it wants to be a plane which is useful on all occasions. It wants to be reliable and lasting, not too heavy and not too light, made to stand up to hard work, but cheap enough to make it good value. The Hobbies Planes illustrated will serve any handyman on a hundred and one occasions, they are the real thing for odd jobs as well as fret-work and carpentry.

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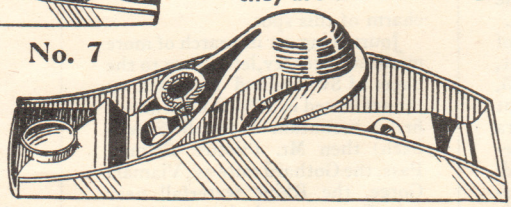

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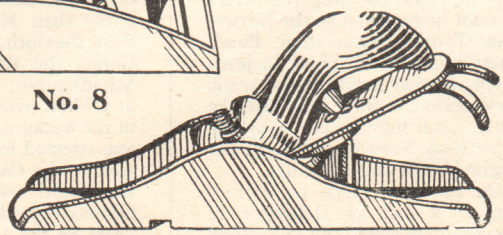

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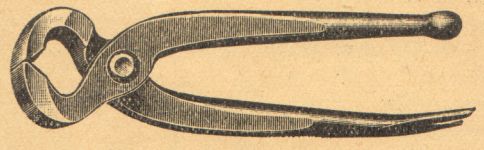

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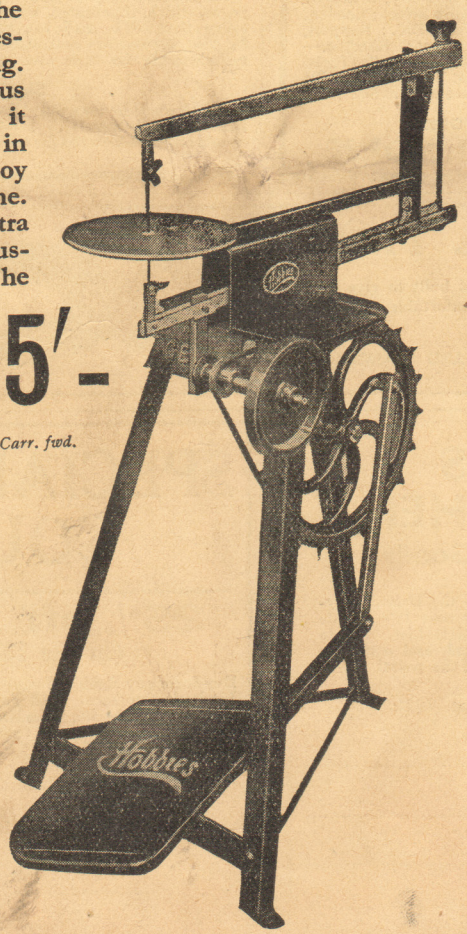

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